Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, D.C. 20554

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| In the Matter of | ) | |
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| Amendment of Section 90.239 of | ) | PR Docket No. 93-61 |
| the Commission's Rules to Adopt | ) | |
| Permanent Regulations for | ) | |
| Automatic Vehicle Monitoring | ) | |
| Systems | ) | |



TO: The Commission

# CONSOLIDATED REPLY TO OPPOSITIONS TO PETITIONS FOR RECONSIDERATION

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CONSOLIDATED REPLY TO OPPOSITIONS TO PETITIONS FOR RECONSIDERATION

Pursuant to 47 C.F.R. §1.429(g) (1994), Texas Instruments Incorporated ("TI") files its Consolidated Reply to Oppositions To Petitions For Reconsideration. TI opposes portions of the Opposition to Petitions for Reconsideration filed by Metricom, Inc. and Southern California Edison (collectively referred to as "MI/SCE"). TI replies to new suggestions and positions asserted in Oppositions filed by: 1) Cellnet Data Systems, Inc. ("Cellnet"); and 2) AirTouch Teletrac ("Teletrac"). Additionally, in furtherance of positions TI supported in its Opposition to Petitions for Reconsideration, TI hereby replies to the Oppositions and Comments filed by: 1) Southwestern Bell Mobile Systems ("SWBM"); 2) Consumer Electronics Group ("Consumer Electronics"); and 3) the Part 15 Coalition ("P15 Coalition").

## I. INTRODUCTION

TI sought only limited reconsideration of the frequency tolerance limit of 2.5 ppm proposed by the Federal Communication Commission ("Commission") and sought clarification

of the calculation of the emission mask and whether the power element of that calculation included or excluded directed antenna gain. No opposition was filed to the request for clarification. Accordingly, no reply is necessary. MI/SCE opposed TI's request for reconsideration of the frequency tolerance limit and Cellnet suggested a waiver procedure to the frequency tolerance limit. TI would reurge that the frequency tolerance limit is not commercially viable, does not serve its purported intent and needlessly imposes delays to market for nonmultilateration providers jeopardizing the very existence of a continued market for these systems.

In its Opposition, TI supported the recommendations regarding extending equipment authorization deadlines and sought clarification that the issues raised by Rand McNally regarding license for use of MTA's did not apply to nonmultilateration licenses. No party asserted opposition to these positions.

In its Opposition, TI opposed reduction of available bandwidth for nonmultilateration systems. TI reasserts its opposition to the parties reurging reduction of the allowable bandwidth for nonmultilateration systems in favor of either exclusive multilateration or Part 15 use. TI also opposes the reurged position of the P15 Coalition to modify the definitions of nonmultilateration systems. Lastly, TI opposes Teletrac's new suggestion of a -100 dBm emission mask for nonmultilateration systems unless only applied to grandfathered nonmultilateration systems in bandwidth reserved for multilateration systems.

## II. THE 2.5 PPM FREQUENCY TOLERANCE LIMIT FOR NONMULTILATERATION SYSTEMS IS NOT SUBSTANTIATED BY THE RECORD FOR INTERFERENCE WITH MULTILATERATION SYSTEMS, MUCH LESS FOR PART 15 DEVICES.

Amtech Corporation ("Amtech"), Hughes Transportation Management Systems ("Hughes") and TI in conjunction with MFS Network Technologies, Inc. ("MFS") requested modification of the frequency tolerance limit for nonmultilateration systems that was originally proposed by Teletrac and adopted by the Commission as a method for minimizing interference between multilateration and nonmultilateration systems in shared bandwidth. Yet, there is only minimal shared bandwidth, 2 mHz between multilateration and nonmultilateration systems. No Opposition filed by a multilateration provider opposed relaxation of the frequency tolerance limit. Specifically, as discussed below, in lieu of opposing the frequency tolerance limit to safeguard interference, Teletrac now suggests that the emission mask for nonmultilateration systems should be modified to account for this interference in out-of-band transmissions for a limited number of grandfathered nonmultilateration LMS systems.

The opposition filed to the proposed relaxation of the frequency tolerance limit now comes from the Part 15 community. While TI will agree with MI/SCE that the Commission adopted height and power restriction for nonmultilateration systems to minimize interference between nonmultilateration systems and Part 15 devices, without supporting reference, MI/SCE asserts that the Commission adopted the frequency tolerance limits "to facilitate the use of both non-multilateration and Part 15 devices in the band."[1] This is historically inaccurate. It is also not particularly accurate to assert that the frequency tolerance limit is

[1] Opposition to Petitions for Reconsideration filed by MI/SCE, p. 18 ("MI/SCE Opposition").

directed to minimizing interference with neighboring frequencies. That is the function of the proposed emission mask directed to out-of-band transmissions.

Without support, MI/SCE assert that "the technology necessary to comply with the frequency tolerance limit will not be a burden on ... non-multilateration systems."[2] Since MI/SCE are not in the nonmultilateration systems business, it is very difficult to fathom how MI/SCE could support this assertion. TI supports the thoughtful analysis of the impact on cost and market set forth by Hughes in its Petition for Reconsideration.[3] TI would reiterate that due to the technological construction and limits on the nonmultilateration systems as short range systems, to function as designed, nonmultilateration providers anticipate deploying hundreds of thousands of transponders across North America. Any additional cost per transponder even incremental costs are a burden on the nonmultilateration customers in a market that will not tolerate the increase.

Nonmultilateration interests have not sought in any manner to reduce either available technologies or the potential markets for Part 15 technology. Nor should this rulemaking be manipulated by Part 15 providers to regulate what products should be available to the consuming public by nonmultilateration technology.

MI/SCE provide no support for their assertion that the frequency tolerance limit is "essential" for nonmultilateration systems to share the bandwidth with Part 15 devices.[4] The record in this proceeding already recognizes that there is not substantial interference between

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[2] MI/SCE Opposition, p. 19.

[3] Petition for Reconsideration of Hughes Transportation Management Systems, pp. 7-9 ("Hughes Petition").;

[4] MI/SCE Opposition, p. 19.

nonmultilateration systems and Part 15 devices even under the interim rules which do not impose the 2.5 ppm frequency tolerance limit. The record in this proceeding is replete with explanations of how nonmultilateration systems provide public benefit, including safety. Similarly, Part 15 devices are utilized for public safety. The Part 15 community lists this parade of horribles of how outdoor based nonmultilateration systems transmitting messages to and from vehicles are going to preclude utilizing Part 15 devices inside hospitals. Due to the directed antennae requirements and fall off associated with what are very localized nonmultilateration systems, even at minimal distances between the systems, there is neither a history of substantial interference nor an expectation of substantial future interference with the Part 15 community. What the Part 15 community seems to ignore is how the very existence of certain insulation effects of the walls of the hospital particularly when combined with this fall-off effect is going to help shield the internal devices. The frequency tolerance limit is not going to materially expand the protection already in place through the physical structure and directional features. This leaves the issue of outdoor utilization of Part 15 devices. No opposition explained away the relative impact on the flexibility of physical movement for Part 15 devices over physical limits on the nonmultilateration devices to avoid interference.

In its Oppositions, Cellnet proposed:

> If, in the future, individual applications require different technical characteristics and the licensee can demonstrate that the grant of such characteristics will not create interference to other users of the band, including those Part 15 devices that meet the threshold parameters of Section 90.309, then a waiver may be

> appropriate. There is no need, however, to provide such unbridled design flexibility in the rules at this time.[5]

TI opposes Cellnet's suggestion that the Commission should leave in place a frequency tolerance limit for nonmultilateration systems for which there is no known complying technology currently being produced, blithely ignoring the impact on the market by the necessary delay in developing commercially viable technology. Moreover, it is incredulous to think that the Commission would invite the additional administrative burden of nonmultilateration providers repeatedly requesting waivers from the Commission when a one time modification of the frequency tolerance limit can avoid this additional administrative cost.

## III. TI OPPOSES THE REQUESTED MODIFICATIONS BY SWBM AND CONSUMER ELECTRONICS TO THE BAND ALLOCATION.

SWBM reurges the Commission to shift the 2 mHz shared bandwidth to the exclusive use of multilateration systems.[6] Consumer Electronics along with Cellnet propose an exclusive bandwidth for Part 15 devices.[7] TI opposes both of these recommendations.

### *A. In Response to SWBM Reurgence Of Its Request To Decrease Available Bandwidth For Nonmultilateration Systems, TI Reurges That No Such Modification Be Supported By The Commission.*

TI has taken great pains to recommend to the Commission a band allocation that maximizes the ability of nonmultilateration systems to share their allocated bandwidth while accommodating the allocation desires of multilateration systems. As noted by Amtech, the

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[5] Opposition to Petitions for Reconsideration filed by Cellnet, pp. 11-12 ("Cellnet Opposition").

[6] Opposition and Comments of SWBM in Response to Petitions for Reconsideration, pp. 3-5 ("SWBM Opposition").

[7] Comments filed by Consumer Electronics, p. 8 ("Consumer Opposition"); Petition for Reconsideration of Cellnet, p. 3 ("Cellnet Petition").

existing bandwidth just affords nonmultilateration systems the flexibility to modify their transmissions to accommodate one another. To eliminate this flexibility by diminishing the contiguous spectrum below 12 mHz will directly undermine the Commission's goal of maximizing shared utilization of the available space by nonmultilateration providers--the whole basis for not establishing auctioning or territorial limitations for licenses and directing nonmultilateration systems to request only that much bandwidth as is necessary.

### *B. Allocating Exclusive Bandwidth to Part 15 Devices in Not In The Best Interest of Part 15 Providers, Has Been Rejected by The Commission and Can Ill Be Afforded by Nonmultilateration and Multilateration Systems.*

As reflected above, neither multilateration nor nonmultilateration providers are willing to reduce their bandwidth allocations. Particular parties on each side of this dispute, in fact, seek more bandwidth. There is simply no place for removal of bandwidth from either nonmultilateration or multilateration systems for reallocation exclusively to Part 15 devices.

An additional rulemaking proceeding on allocation of this band should not be tolerated by the Commission. The delays associated with this rulemaking have been detrimental to each of the respective markets. None of the markets can afford a new round of rulemaking on the allocation issue.

Each of the parties asserting the concerns of the Part 15 community appear unanimous in the notion that Part 15 providers and users do not want to continue to be required to cease their interfering transmission nor modify their systems to avoid resulting interference. Instead, the entire community supports shifting that burden to multilateration providers through the field testing and presumption criteria. MI/SCE have proposed the same shifting of

modification costs to nonmultilateration providers. TI is confident that Part 15 manufacturers and users would be unwilling to either limit their available spectrum to only a portion of the bandwidth or modify their currently deployed technology to fit into only one band dedicated for their exclusive use. But, if the Commission were to consider such an allocation, the TI would seek the same type of phased in compliance and complete migration to the exclusive bandwidth as required for multilateration and nonmultilateration providers.

## IV. TI REASSERTS ITS OPPOSITION TO THE P15 COALITION PROPOSAL TO MODIFY THE DEFINITION OF NONMULTILATERATION SYSTEMS.

In response to Amtech's proposal of a field strength test as an alternative to height and power restrictions for nonmultilateration systems, the P15 Coalition reurged its proposed limitations on the definition of nonmultilateration systems. Since the P15 Coalition offers no support for reurging the limitations except that Amtech's discussion "may suggest that [it] intends to provide new and undefined services in this band"[8] and TI asserted no position with regard to Amtech's proposed field strength alternative, TI sees no reason to set forth an elaborate reply. Simply, TI reurges its position that one of the very purposes of this Commission in this rulemaking was exactly to foster new products and new competitors in the nonmultilateration LMS market. The proposed definitional limitations undermine this goal to no end other than foreclosing product selection and advancement from the public.

## V. AN EMISSION MASK FOR NONMULTILATERATION SYSTEMS OF -100 dBm AS MEASURED BY A MULTILATERATION RECEIVE STATION IS UNTENABLE AS A GENERAL EMISSION MASK FOR ALL NONMULTILATERATION SYSTEMS AND IF ADOPTED SHOULD BE EXPLICITLY LIMITED TO GRANDFATHERED NONMULTILATERATION

[8] Opposition to Petitions for Reconsideration filed by P15 Coalition, pp. 14-15 ("P15 Opposition").

**SYSTEMS OPERATING IN SPECTRUM NOW RESERVED FOR EXCLUSIVE MULTILATERATION USE.**

In asserting an opposition to Amtech's request that nonmultilateration systems currently operating in bandwidth reserved under the proposed final rules for multilateration systems be subject to grandfathering so long as there is no actual harmful interference, as measured by an emission mask of 90 dBuV/m at a distance of one mile and six feet above ground, Teletrac now suggests that an emission mask calculation should be at -100 dBm measured through the multilateration LMS receive station regardless of the distance from the nonmultilateration system and the multilateration system.[9] While TI takes no position with regard to Amtech's proposal for an emission mask, TI opposes Teletrac's new proposal to the extent that the proposal might be adopted in any situation other than grandfathered nonmultilateration systems in bandwidth now reserved for multilateration systems.

TI products operate at a 915 mHz band and are licensed at that band. Accordingly, TI products do not fall within the background presumption of Amtech to which Teletrac makes this recommendation of a -100 dBm attenuation. However, TI is content with the emission mask proposed in the Report and Order provided that its requested clarification is granted. Specifically, that clarification sought confirmation that the maximum power level outside the 909.75 - 921.75 bandwidth is no more than -55 dBW.

## VI. CONCLUSION.

For all the reasons set forth above, the Commission should deny the portions of the oppositions to petitions for reconsideration that attempt to modify the definition of

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[9] Consolidated Opposition to Petitions for Reconsideration and Clarification filed by Teletrac, pp. 19-20 ("Teletrac Opposition").

nonmultilateration systems, that attempt to elevate Part 15 devices to a co-primary status with nonmultilateration systems by expanding the reach of testing requirements and the presumption against harmful interference, that seek to impose further delay to establish rules regarding conflicts between nonmultilateration systems and Part 15 users, that attempt to reduce available spectrum for nonmultilateration systems, and that contract the grandfathering provisions. TI further respectfully joins in requests that the Commission relax the frequency tolerance limits on nonmultilateration systems, expand the grandfathering provisions, and extend the deadlines for obtaining type-acceptance. Lastly, TI respectfully requests that the Commission clarify the licensing requirements with respect to Rand McNally for nonmultilateration system licenses.

Respectfully submitted,

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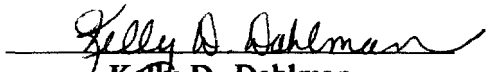

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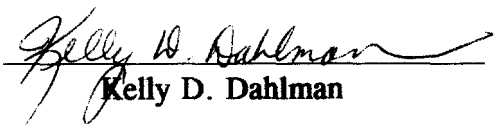
Dated: June 7, 1995

CERTIFICATE OF SERVICE

I hereby certify that a true and correct copy of the foregoing document has been served on the parties and individuals identified on the attached service list by first-class mail, postage pre-paid, on this the 7th day of June, 1995.



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